

§ 177.300

(4) There are no major modifications to any of the systems to be used.

(b) If approved plans for the original vessel are not on file at the MSC or with the cognizant OCMI, the vessel owner shall submit plans as described in § 177.202 of this part.

Subpart C—Hull Structure

§ 177.300 Structural design.

Except as otherwise allowed by this subpart, a vessel must comply with the structural design requirements of one of the standards listed below for the hull material of the vessel.

(a) Wooden hull vessels: Lloyd's Yachts and Small Craft (incorporated by reference, see 46 CFR 175.600);

(b) Steel hull vessels:

(1) Lloyd's Yachts and Small Craft; or

(2) ABS Steel Vessel Rules (< 61 Meters) (incorporated by reference, see 46 CFR 175.600);

(c) Fiber reinforced plastic vessels:

(1) Lloyd's Yachts and Small Craft;

(2) ABS Plastic Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(3) ABS High Speed Craft (incorporated by reference, see 46 CFR 175.600);

(d) Aluminum hull vessels:

(1) Lloyd's Yachts and Small Craft; or

(i) For a vessel of more than 30.5 meters (100 feet) in length: ABS Aluminum Vessel Rules (incorporated by reference, see 46 CFR 175.600); or

(ii) For a vessel of not more than 30.5 meters (100 feet) in length: ABS Steel Vessel Rules (< 61 Meters), with the appropriate conversions from the ABS Aluminum Vessel Rules; or

(2) ABS High Speed Craft;

(e) Steel hull vessels operating in protected waters: ABS Steel Vessel Rules (Rivers/Intracoastal) (incorporated by reference, see 46 CFR 175.600).

[USCG–2003–16630, 73 FR 65205, Oct. 31, 2008]

§ 177.310 Satisfactory service as a design basis.

When scantlings for the hull, deckhouse, and frames of the vessel differ from those specified by the standards listed in § 177.300 of this part, and the

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owner can demonstrate that the vessel, or another vessel approximating the same size, power, and displacement, has been built to such scantlings and has been in satisfactory service insofar as structural adequacy is concerned for a period of at least 5 years, such scantlings may be approved by the cognizant OCMI instead of the scantlings required by the applicable standards specified in § 177.300 of this part.

§ 177.315 Vessels of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers.

The scantlings for a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 12 passengers that do not meet the standards in §§ 177.300 or 177.310 may be approved by the cognizant OCMI if the builder of the vessel establishes to the satisfaction of the OCMI that the design and construction of the vessel is adequate for the intended service.

§ 177.330 Sailing vessels.

The design, materials, and construction of masts, posts, yards, booms, bowsprits, and standing rigging on a sailing vessel must be suitable for the intended service. The hull structure must be adequately reinforced to ensure sufficient strength and resistance to plate buckling. The cognizant OCMI may require the owner to submit detailed calculations on the strength of the mast, post, yards, booms, bowsprits, and standing rigging to the Marine Safety Center for evaluation.

§ 177.340 Alternate design considerations.

When the structure of vessel is of novel design, unusual form, or special materials, which cannot be reviewed or approved in accordance with §§ 177.300, 177.310 or 177.315, the structure may be approved by the Commanding Officer, Marine Safety Center, when it can be shown by systematic analysis based on engineering principles that the structure provides adequate safety and strength. The owner shall submit detailed plans, material component specifications, and design criteria, including the expected operating environment,

resulting loads on the vessel, and design limitations for such vessel, to the Marine Safety Center.

Subpart D—Fire Protection

§ 177.405 General arrangement and outfitting.

(a) *Fire hazards to be minimized.* The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) *Combustibles insulated from heated surfaces.* Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material. Dry exhaust systems for internal combustion engines on wooden or fiber reinforced plastic vessels must be installed in accordance with ABYC P-1 (incorporated by reference, see 46 CFR 175.600).

(c) *Separation of machinery and fuel tank spaces from accommodation spaces.* Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(d) *Paint and flammable liquid lockers.* Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(e) *Vapor barriers.* Vapor barriers must be provided where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(f) *Waste receptacles.* Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of non-combustible materials with no openings in the sides or bottom.

(g) *Mattresses.* All mattresses must comply with either:

(1) The U.S. Department of Commerce “Standard for Mattress Flammability” (FF 4-72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or

(2) IMO Resolution A.688(17) (incorporated by reference, see 46 CFR 175.600). Mattresses that are tested to

this standard may contain polyurethane foam.

[CGD 85-080, 61 FR 961, Jan. 10, 1996, as amended by USCG-2003-16630, 73 FR 65206, Oct. 31, 2008]

§ 177.410 Structural fire protection.

(a) *Cooking areas.* Vertical or horizontal surfaces within 910 millimeters (3 feet) of cooking appliances must have an ASTM E-84 (incorporated by reference, see 46 CFR 175.600) flame spread rating of not more than 75. Curtains, draperies, or free hanging fabrics must not be fitted within 910 millimeters (3 feet) of cooking or heating appliances.

(b) *Composite materials.* When the hull, bulkheads, decks, deckhouse, or superstructure of a vessel is partially or completely constructed of a composite material, including fiber reinforced plastic, the resin used must be fire retardant and meet as accepted by the Commandant as meeting NPFC MIL-R-21607E(SH) (incorporated by reference, see 46 CFR 175.600). Resin systems that have not been accepted as meeting NPFC MIL-R-21607E(SH) may be accepted as fire retardant if they have an ASTM E-84 flame spread rating of not more than 100 when tested in laminate form. The laminate submitted for testing the resin system to ASTM E-84 must meet the following requirements:

(1) The test specimen laminate total thickness must be between 3.2 and 6.4 millimeters ($\frac{1}{8}$ to $\frac{1}{4}$ inch).

(2) The test specimen laminate must be reinforced with glass fiber of any form and must have a minimum resin content of 40 percent by weight.

(3) Tests must be performed by an independent laboratory.

(4) Test results must include, at a minimum, the resin manufacturer's name and address, the manufacturer's designation (part number) for the resin system including any additives used, the test laboratory's name and address, the test specimen laminate schedule, and the flame spread index resulting from the ASTM E-84 test.

(5) Specific laminate schedules, regardless of resin type, that have an ASTM E-84 flame spread rating of not more than 100 may be considered as equivalent to the requirement in this section to use a fire retardant resin.